

SMWCon Spring 2014

Semantic Mediawiki Tutorial

About the presenter

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- Using SMW in projects since 2008-ish
- Bootstrap and support wikis with tens of thousands of edits
- Arts, science, software dev, novice to expert users
- Extending SMW using Javascript/API

Overview

Wikis and the Web

- The web is a hypertext system — **links** between distributed **pages**
- Every web site can use different software
- Wikis, as a type of software, typically enable ‘quick’ editing and linking of web pages
- We’ll focus on Mediawiki’s implementation

About MediaWiki (MW)

- Open source, created in 2003
- The software behind Wikipedia
- Supported by hundreds of devs, languages
- Used by a large number of public wikis, also within organizations
- Easy to self host, or use a wikifarm
- Hundreds of extensions, usability

MW features

- Recognized by many people (Wikipedia)
 - Culture, content and functionality
- To Web features of **pages** and **links**, adds **categories**, **namespaces**, and **templates** along with dynamic functions
- Like many wikis, MW uses markup instead of a word processor like interface

MW features

- Supports customizing appearance
- Change sidebar links
- Programming interface (API)
- Different access models
 - Totally open (Wikipedia)
 - Require login (Public)
 - Closed (Private)
 - Restricted editors (documentation)

MW features

For every page:

- Page history
- Discussion (talk)
- Edit
- Watch
- What links here

Across the site:

- Recent changes
- Upload file

Special:

- What's installed
- Statistics

Wiki participation

- On some wikis, only one or a few people are editing, with a few or many reading, but it's often considered ideal to have many editors
- This can be cultivated by encouraging people to support each other.
- Some people will be content creators, some categorizers, some spelling correctors, some “just” read

Wiki participation

- If you want your wiki to be central to your organization, make it easy to login (using central sign in or an open wiki)
- Make it the default page of the organization
- Let people make mistakes and gently correct them

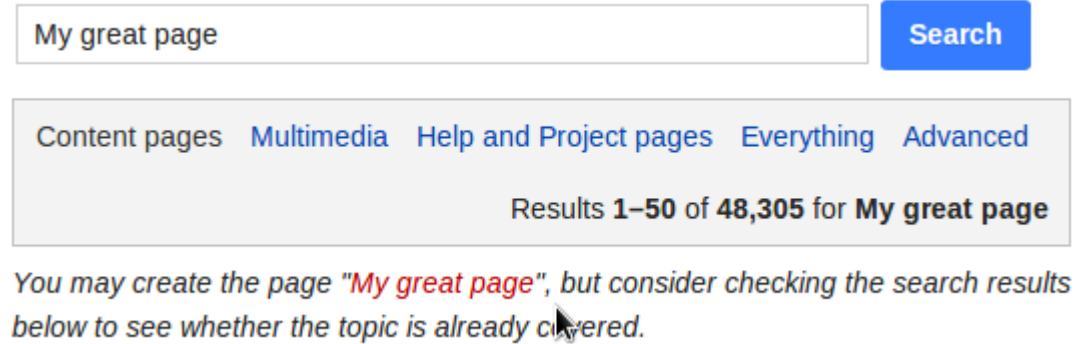
Wiki participation

- Page names, categories, templates, etc are used across the wiki. On a shared wiki, you may need to appoint some people to manage overlap or even lock down pages
- Public wikis will need anti spam systems and/or constant monitoring

Editing pages

Creating and editing pages

- You can create or edit a page by entering it in the search box, then select it or the “redlink” on results
- Or create a [[redlink]] in an existing page



Naming pages

- Every page name in a wiki must be unique
- Recommended to use sentence form rather than Title Case
 - Since they'll probably be used in a sentence

MW Markup

- Why? — compared to word processor formatting, wikis focus on finely tracking changes and **meaningful** formatting
- Wiki markup is meant to resemble formatted, meaningful content
- MW toolbar makes it simpler, some rich text editors

MW Markup examples

==Header 1== [[Extends::A page]] [[Favourite number::5]] [[From country::Canada]]

===Header 2=== (etc.)

"italics"

'''bold'''

[[Link to wiki-page]]

[[Some page|link with custom text]]

[http://some.url Link to an outside URL]

* bulleted list

numbered list

- You should see a link to *Editing help* when editing a page.



Namespaces

- Every page is in a namespace.
 - none (Main) – regular pages
 - “User:” - user pages
 - “Category:” - category pages
 - “File:” - images and other uploaded files
 - “Template:” - template pages
 - “MediaWiki:” - system messages
 - “Special:” - provide functionality; not editable
 - “Talk”, “User talk”, “Category talk” etc. - discussion of contents on corresponding page

Categories

- Used to organize pages
- Simply add `[[Category:Category name]]` in the page
- Add Categories to Categories to create a hierarchy (or heterarchy)
- Link to categories using `[[:Category:Category name]]`

Categories are key

- Storing pages in categories (along with good page linking) is key to a usable site
- You probably want a structure like this:

[−] Starting category

[+] IT support

[+] Platform

[+] Projects

[+] System administration

[+] User

[+] Wiki systems

- The CategoryTree extension is useful

Exercise 1

Go here: <http://tutorial.nicer.info>

Part a

Results 1–50 of 48,305 for My

the page "*My great page*", but consider checking the :
ether the topic is already covered.

age

changes

Cancel | [Editing help](#) (opens in new wi

- Create a new page with your name
- Include a first level heading, a list, and a second level heading
- Add it to a category with your name
- Save the page
- Add your category to the Tutorial category and save it

Part b

- Look at the site's Recent Changes
- Find your page and select it
- Edit your page and add a link to someone else's page
- Look at the page history
- Compare the current revisions

Exercise summary

- You can create a web site with formatting and links
- You created a category and included your page
- You can see changes across the site
- You can view page editing histories, and undo changes

More advanced MW features

Templates

- Used for re-used content to avoid repetition and increase consistency
- “Transcluded” at display time
- Support variables - `{{{1}}}` , `{{{Name}}}` and a programming language
- Many are used on Wikipedia for Infoboxes

Infobox template

```
{{Infobox website
```

```
| name           = Wikipedia
```

```
| logo           = [[File:Wikipedia-v2-logo.svg|frameless|150px|alt=A white sphere made of large jigsaw pieces. Letters from several alphabets are shown on the pieces]]<br />[[File:Wikipedia wordmark.svg|150px|Wikipedia wordmark]]
```

```
| logocaption    = The [[logo of Wikipedia]], a globe featuring [[glyph]]s from several [[writing systems]], most of them meaning the letter [[w]], such as the Arabic 'Wo'
```

```
| screenshot     = [[File:Www.wikipedia.org screenshot 2013.png|border|300px|alt=Wikipedia's homepage with links to many languages.]]
```

```
| collapsible    = yes
```

```
| caption        = Screenshot of Wikipedia's multilingual portal
```

```
| url            = {{URL|http://www.wikipedia.org|Wikipedia.org}}
```


```
| slogan         = The free encyclopedia that anyone can edit
```

```
| commercial     = No
```

```
| type           = [[Internet encyclopedia]]
```

```
| registration   = Optional, but is required for certain tasks such as editing [[protected page]]s, creating pages in English Wikipedia and uploading files.
```

```
| language       = 276 active editions (286 in total)
```

Wikipedia	
	
WIKIPEDIA	
The <i>logo of Wikipedia</i> , a globe featuring <i>glyphs</i> from several <i>writing systems</i> , most of them meaning the letter <i>w</i> , such as the Arabic 'Wo'	
Screenshot	[show]
Web address	Wikipedia.org gP
Slogan	The free encyclopedia that anyone can edit
Commercial?	No
Type of site	Internet encyclopedia
Registration	Optional, but is required for certain tasks such as editing protected pages , creating pages in English Wikipedia and uploading files.
Available language(s)	276 active editions (286 in total)
Users	130,858 active editors (May 2014), ^[1] 21,397,554 total accounts.
Content license	CC Attribution / Share-Alike 3.0 Most text also dual-licensed under GFDL , media licensing varies.
Owner	Wikimedia Foundation

Redirects (Move)



#REDIRECT [[Actual page]]

- Preserve links to pages when they're moved
- Useful for synonyms, misspellings, and content subsets (like a book redirecting to its author)

Images

- Use *Upload file* from MW menu

```
[[File:image name  
|border/frame/frameless/thumb  
|widthpx  
|xheightpx  
|left/right/center/none  
|link=  
|alt=  
]]
```

- Useful to create the link first

Dynamic functions

Four kinds:

- Parser functions: `{{#ask:...}}`
- Tags: `<nowiki>...</nowiki>`
- Variables: `{{PAGENAME}}`
- Behavior switches: `__NOTOC__`

Semantic Mediawiki (SMW)



SMW Overview

- An extension of MW created in 2005
- Maintains MW features like readability, history, etc
- Based on the Semantic Web idea of **triples**
- Results in database like features, with properties added to pages, and queries that work across pages

Triples

- Instead of all links being just “a link,” they become a typed association with predicates

The page is the “subject,” the link type the “predicate,” the property the “object”

- *SMW Links MW* - not much meaning/reusability
- *SMW extends MW* - much more meaningful
- With typed links SMW becomes a database, preserving human usable wiki syntax

Creating properties

- Properties are an extension of links.
A regular link `[[MW]]`
- A property (on the SMW page) `[[Extends::MW]]`
- Properties have types, by default they are other Pages, but can be numbers, dates, geographic coordinates, etc

Querying properties

- Once you've created these properties, you can query them using `{ { #ask: } }`
`{ { #ask: [[Extends :: +]] } }`
- This means: ask for all pages that have the Extends property, with any value (+)
- Queries often use a combination of categories and properties

Querying properties

- Ask returns a list of pages matching the query. You can also include properties, in this case our Extends property

```
{ { #ask: [[Extends::+]]  
  | ?Extends  
}
```

- Count and other formats are supported

Exercise 2

Part a

- Add an Extends property to your page that links to someone else's page, a *Favourite number* property, with a number value, and a *From country* property with the country you're from
- Add a query that shows a list of all pages with an Extends property, including the property values

Exercise summary

- You can use your wiki as a database system

Formatting output

- You can control sorting, label display, and other parameters using query parameters
- By specifying `format=template` and `template=templatename`, you can format results
- Output is sent via `{{{1}}}`, `{{{2}}}`, in order to be plugged into templates

SMW extensions

SMW Extensions

- There are dozens of SMW extensions
- Extensions like Semantic Result Formats and Semantic Maps let you create query views like sums, summaries, wordclouds, calendars, graphs, maps, etc

Exercise 3

Part a

- Create a sum query based on the Favourite number property
- Create a map query based on the From property

Exercise summary

- You can view results in their most appropriate format

Semantic Forms

- Properties can be inline as we've seen. But inline formats can be difficult to manage and work with consistently
- Semantic Forms use a combination of forms, templates, properties, and categories to create *classes*.

A Special:CreateClass page takes care of creating the first version

Semantic Forms

- Uses a variety of inputs to make editing content easy. Restricted input, autocomplete, date picking, image uploading, responsive elements, multiple values per field, and other features are available.
- Advanced features enable creating page names based on input, interacting with

Exercise

Part a

- Go to *Special>CreateClass* and create a new Form named after yourself
- Give it a *Favourite number*, *From country*, using the correct property type
- Save it
- Look at Recent Changes, notice the elements from different forms appearing (they're queued)

Part b

- Go to the page for your form
- Enter a page name and select Create
- Fill in the values and save it
- Go back to your query page and observe the results

Exercise summary

- You created a form that makes it easier to enter structured content
- Your query includes the results of any values that match

http://tutorial.nicer.info/w/Tutorial_results

Updating classes

- Forms and templates use wiki markup and extend parser functions
- After forms, properties and templates are generated they must be manually edited
- Since templates are used for final rendering, control is provided over appearance

Updating classes

- Logic can also be embedded in templates, for example to assign categories depending on property values (like Concepts)
- Subobjects and Semantic Internal Objects are also available to associate multiple elements to one page using interactive forms

Getting help

- https://semantic-mediawiki.org/wiki/Semantic_MediaWiki
- https://www.semantic-mediawiki.org/wiki/Semantic_Result_Formats
- https://www.mediawiki.org/wiki/Extension:Semantic_Forms
- semediawiki-user@lists.sourceforge.net mailing list
- [#semantic-mediawiki](https://irc.freenode.net) on irc.freenode.net